



## Who Should Attend?

All subsurface disciplines involved in subsurface projects will benefit from the course

This course is designed for new hires and experienced geoscientists alike. Participants will build on their existing knowledge due to the exercise-based nature of the course

## Why should you attend?

At the end of this class, the participants will have gained a sound understanding on how rock deform throughout the geological history, how rock properties influence the geometry of faults in the sub-surface and how the faults can be simplified with the appropriate audit trail in the maps and 3D static and dynamic models. Examples of exploration and production scale case studies will be used throughout the course to ensure a business context to the learnings. The course will help the participant to create robust and appropriate map and 3D model linked to the maturity of their project and their business objectives.

### Alternative options

A class-room only option is also possible with the possibility to run a Virtual Field trip in Jebel Madar using VRExplorer.

# Structural Geology Must Knows (2-3-day class-room – 2-day field trip)

## Day 1 Class-room - Key foundations

- Course introduction. Why are we here today?
- Structural geology foundation concepts recap
- Understand how rock break and the impact on fault geometry
  - ✓ Mohr circle introduction, stress and strain exercises
  - ✓ The pole of the Mohr circle introduction and exercises  
A powerful tool to assess the likelihood of fault reactivation
- Structural evolution lecture and exercises
  - ✓ Use detailed observations on cross-sections to unravel faulting history)

## Day 2 Class-room –Fault growth and fault geometries

- Recap of day 1
- Understanding how fault grow
- Fault geometries, fault growth, fault segmentation lecture and exercises
  - ✓ Impact on structural modeling, fault seal, mapping etc
- Fault QA-QC, fault resolution lecture and exercises
- Fundamentals of strike-slip deformation (lecture and exercises)
- Structural styles
- Fault kinematics interpretation exercise based on map views
- Field trip introduction

## Day 3 Field trip - Jebel Shams dip slope

- Faults in map view and cross-section – Large scale
- Fault seal potential in limestones
- Damage zones around faults
- Fault geometries – fault growth, fault segmentation
- Impact for seismic interpretation and static model building
- Link to drilling and dynamic simulation

## Day 4 Field trip - Jebel Madar

- Fault mapping at smaller scale (production scale)
- Link smaller scale observations to larger scale regional evolution and vice versa.
- Impact of fault geometry on fault seal potential
- Fault geometries – fault growth, fault segmentation
- Impact for seismic interpretation and static model building
- Link to drilling and dynamic simulation
- Recap of the class in small syndicates

